STEREO CONTROL AMPLIFIER

KC-209

SERVICE MANUAL

KENWOOD

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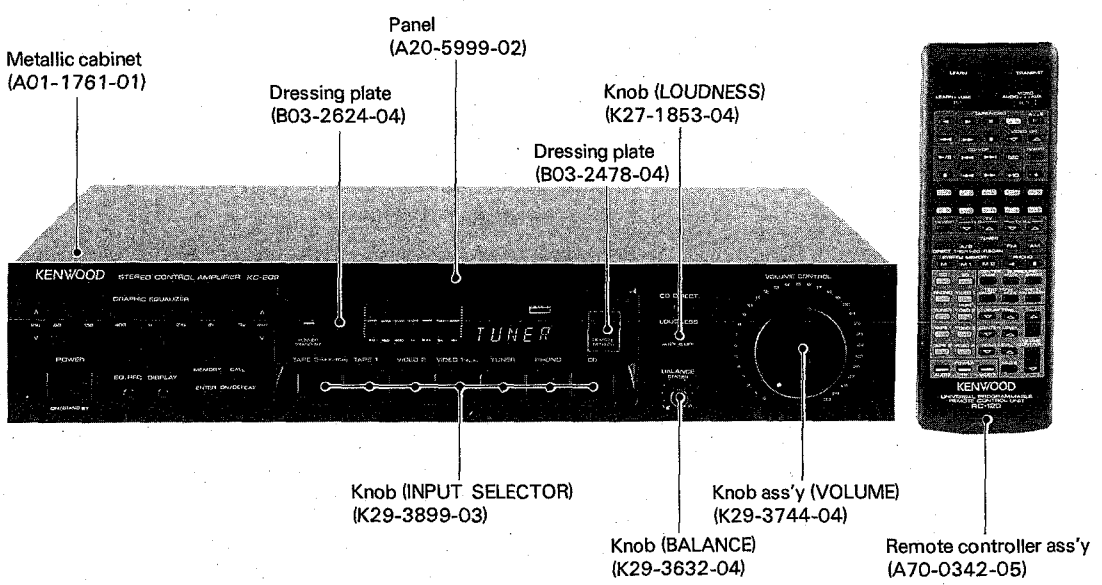
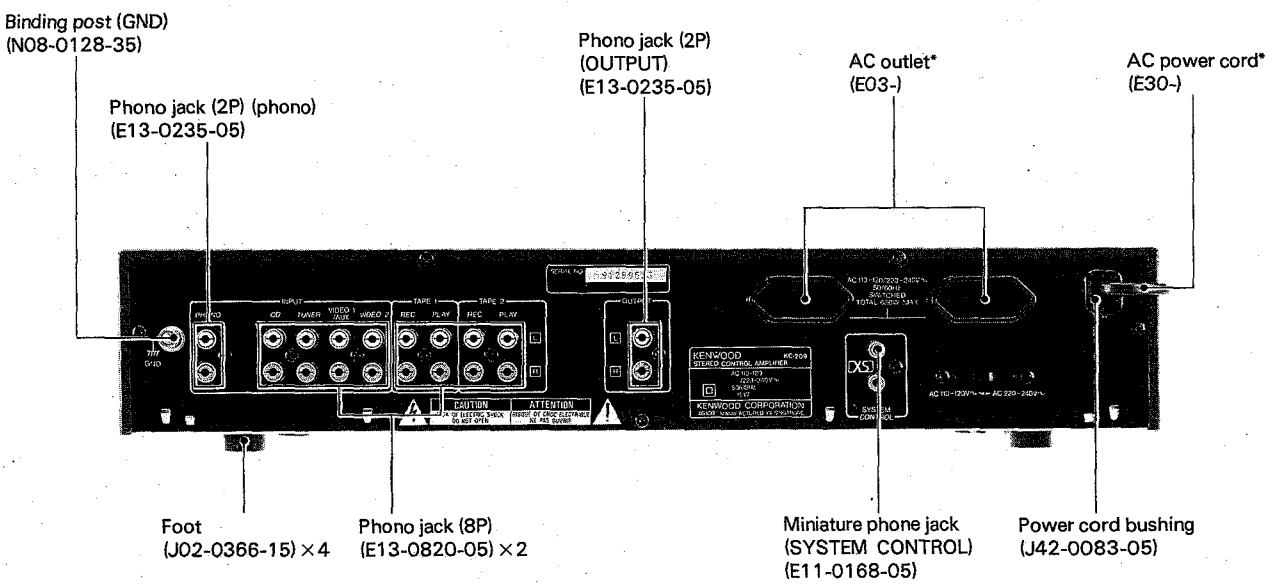
B51-4077-00(S)1950





*Refer to Parts List on page 22.

KC-209

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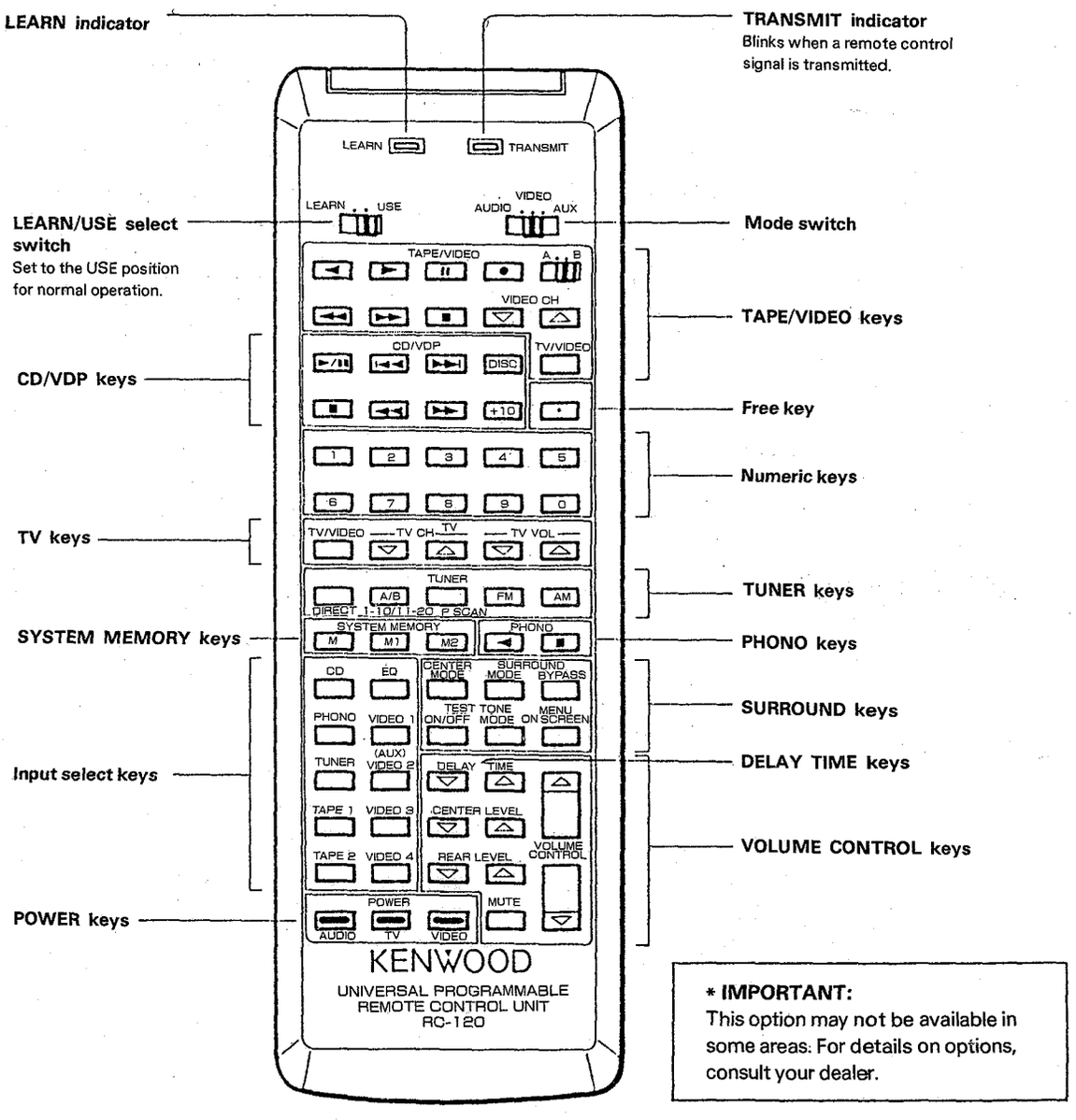
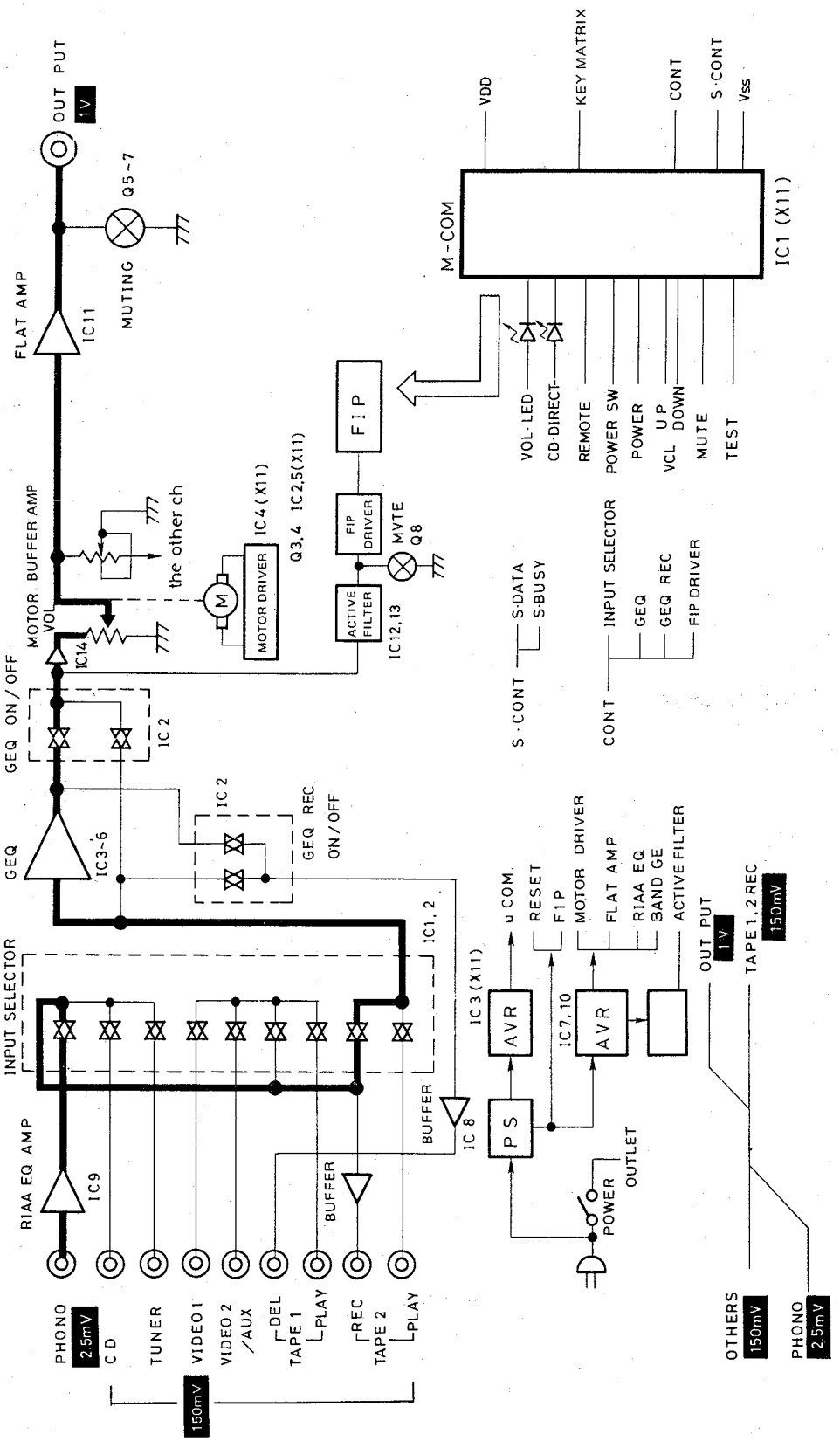
NAMES AND OPERATION OF CONTROLS



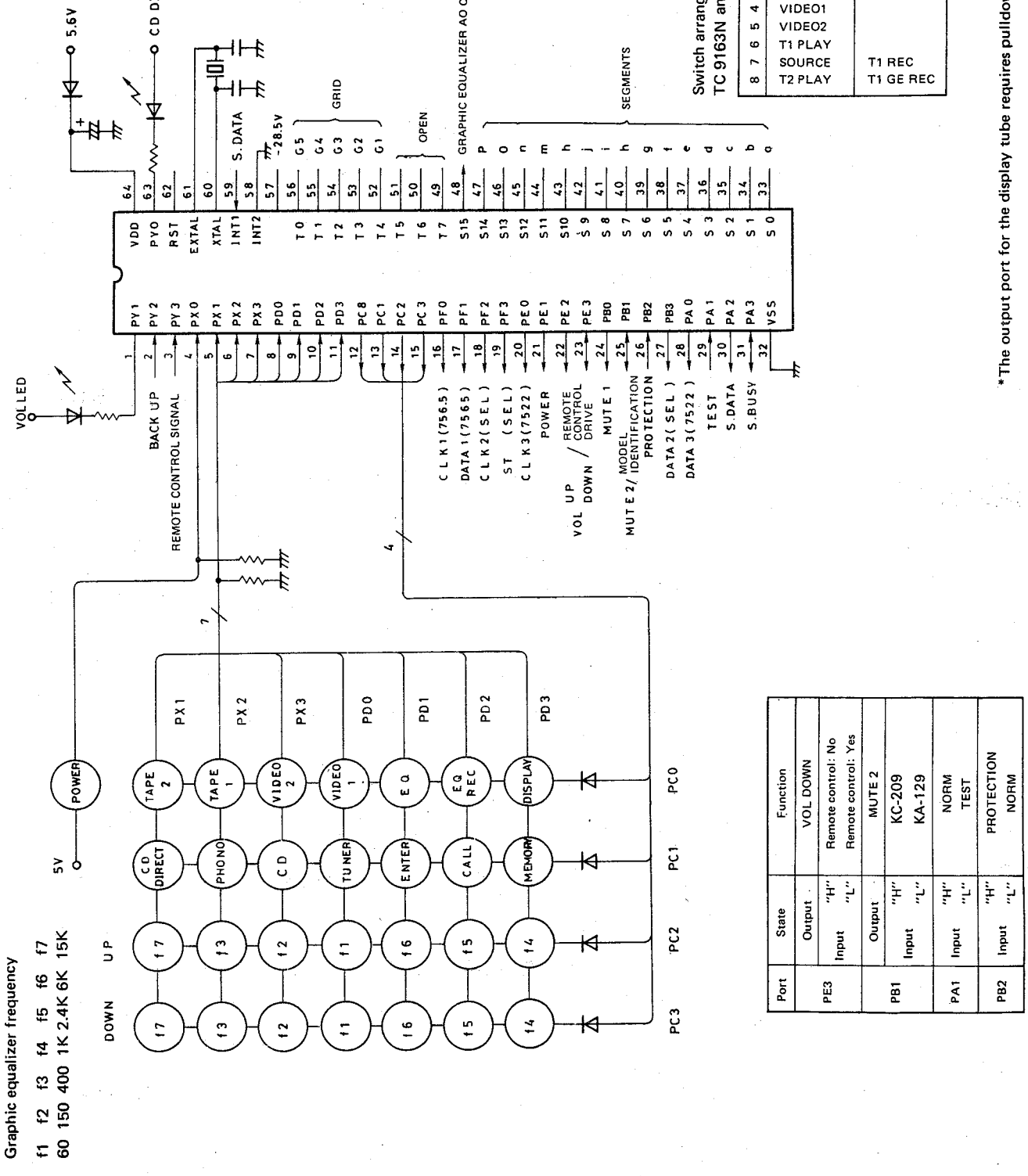
BLOCK LEVEL DIAGRAM



KC-209

CIRCUIT DESCRIPTION

IC1 (X11-2660-XX): μ-com. CXP 5014-519S



Graphic equalizer frequency
f1 f2 f3 f4 f5 f6 f7
60 150 400 1K 2.4K 6K 15K

Switch arrangement for TC 9163N and TC 9164N

8 7 6 5 4 3 2 1	SEL. IC	TC9163N	TC9164N
		PHONE	GE ON
		CD	GE OFF
		TUNER	CD DIRECT
		VIDEO1	
		VIDEO2	
		T1 PLAY	
		SOURCE	T1 REC
		T2 PLAY	T1 GE REC

*The output port for the display tube requires pulldown for piggybacking.

Port	State		Function
PE3	Output		VOL DOWN
	Input	"H"	Remote control: No
		"L"	Remote control: Yes
PB1	Output		MUTE 2
	Input	"H"	KC-209
		"L"	KA-129
PA1	Input	"H"	NORM
		"L"	TEST
PB2	Input	"H"	PROTECTION
		"L"	NORM

CIRCUIT DESCRIPTION

Pin description

Pin No.	Symbol	I/$\overline{O}$	Description
1	PY_1	$\overline{O}$	Volume contiol, LED control pin. Normally ON;flashing when remote control volume UP/DOWN is pressed.
2	PY_2	I	Backup detection pin "H": Normal operation "L": Backup
3	PY_3	I	Remote control signal input pin. Active "L".
4	PX_0	I	Key matrix return signal input pin. Active "H"
5	PX_1	I	
6	PX_2	I	
7	PX_3	I	
8	PD_0	I	
9	PD_1	I	
10	PD_2	I	
11	PD_3	I	
12	PC_0	$\overline{O}$	Key matrix digit signal output pin. (Normally all "H")
13	PC_1	$\overline{O}$	
14	PC_2	$\overline{O}$	
15	PC_3	$\overline{O}$	
16	PF_0	$\overline{O}$	LC7565 clock pin(CLK1) LC7565:Graphic equalizer display IC(DATA1)
17	PF_1	$\overline{O}$	LC7565 data pin Active "H"
18	PF_2	$\overline{O}$	TC9163N and TC9164N clock pin(CLK_2) TC9163N and TC9164N:Selector switching ICs Active "H"
19	PF_3	$\overline{O}$	TC9163N and TC9164N strobe pin(ST) Active "H"
20	PE_0	$\overline{O}$	LC7522 clock pin(CLK3) LC7522:ELectronic volume control for graphic equalizer. Active "H"
21	PE_1	$\overline{O}$	Power relay control pin Active"H"
22	PE_2	$\overline{O}$	UP Electronic volume control pin Active"H"
23	PE_3	$\overline{O}$/1	DOWN Electrouic volume control pin *The DOWN pin also functions as a remote control identifi cation pin
24	PB_0	$\overline{O}$	MUTE1 Mute control pin(for LINE muting)Active"L"
25	PB_1	O/1	MUTE2 Mute control pin(for REC muting)Active"L"
26	PB_2	I	PROTECTION Protection state detection pin Active"H"
27	PB_3	O	TC9163N and TC9164N data pin(DATA2)Active"H"
28	PA_0	$\overline{O}$	LC7522 data pin(DATA3) Active"H"
29	PA_1	I	TEST Test mode detection pin "H" Normal operation "L" Test mode *Detected when reset
30	PA_2	I/$\overline{O}$	S. DATA Used for serial communication(data pin) Active "H"
31	PA_3	I/$\overline{O}$	S. BUSY Used for serial communication (busy pin) Active "H"
32	Vss		GND pin
33	S_0	$\overline{O}$	a FL tube segment control pin Active "H"
⌇	⌇		⌇ *With a pulldown resistor as a mask option (pins 33 to 66)
47	S_{14}	$\overline{O}$	p
48	S_{15}	$\overline{O}$	—30V control pin for KC-209 Aϕ pin control pin for graphic equalizer display in the FL tube for (KA-128). Active "H"
49	T7	$\overline{O}$	Not used
⌇	⌇		
51	T5	$\overline{O}$	
52	T4	$\overline{O}$	G1 Grid control pin for FL tube Active "H"
⌇	⌇		⌇
56	T0		G2
57	V_{FDP}		FL tube drive power pin(−30V)
58	INT_2	I	Unused interrupt pin
59	INT_1	I	Receive interrupt pin for serial communication
60	X_{IAL}		System clock generation pin 4.19 MHz
61	E_{XTAL}		
62	RST	I	Reset input pin "L"reset
63	PYϕ	$\overline{O}$ (n, d)	CD DIRECT LED control pin * Used for KC-209 only
64	V_{DD}		5V power pin for microprocessor *Keep the poential with a super capacitor, etc, for backup.

KC-209

CIRCUIT DESCRIPTION

1. Test mode

When pin 29 of the microprocessor is pulled LOW (grounded) by connecting it to an outlet (reset), test mode is entered.

(a) All-segments-ON mode

All the segments except those of the graphic equalizer and the ℓ in figure 1 come on. When this happens, the graphic equalizer key is inhibited and the SELECTOR key can be operated, but the display remains unchanged. Pressing the Power key once cancels the all-segments-ON mode.

2. Protection function (expect KC-209)

Pin 26 of the microprocessor goes high (5V) to indicate the protection state (abnormal operation).

(a) Protection state setting conditions

The state of the protection IC of the main amplifier is always monitored. When the protection IC enters the protection state, a high signal (5V) is input to the microprocessor. The microprocessor allows about 400ms chaitering time (to prevent malfunction) and then enters the protection state.

(b) Protection indication

''P-OFF'' flashes on the character display (selector display) of the fluorescent tube.

3. Model Identification (KC-209 [Preamplifier]/ KA-129 [Pre-main amplifier])

- When the signal on pin 25 of the microprocessor is high, the model is identified as a KC-209 (preamplifier). When the signal is low, the model is identified as a KA-129 (Pre-main amplifier).
- Separate program processing is performed when the power is switched ON and OFF.
- Pin 48 (S15) of the KC-209 (preamplifier) controls the FL tube drive power supply (—30V) when the power is switched ON, S15 is pulled high when the display lights.

(b) Graphic equalizer test mode

The state of the graphic equalizer can be switched between MAX and MIN by pressing the UP/DOWN key once.

MAX ⇄ FLAT ⇄ MIN

(c) Cancel

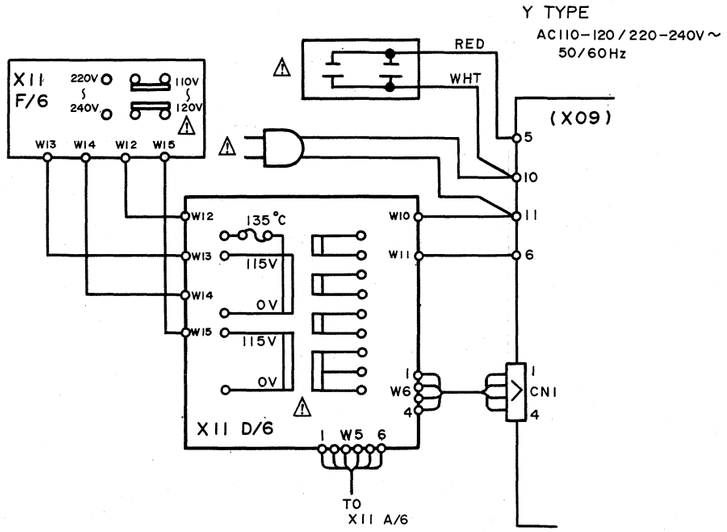
Test modes a and b are set to their initial states (SEL, TUNER, and graphic equalizer memory all flat) when pin 29 of the microprocessor is disconnected.

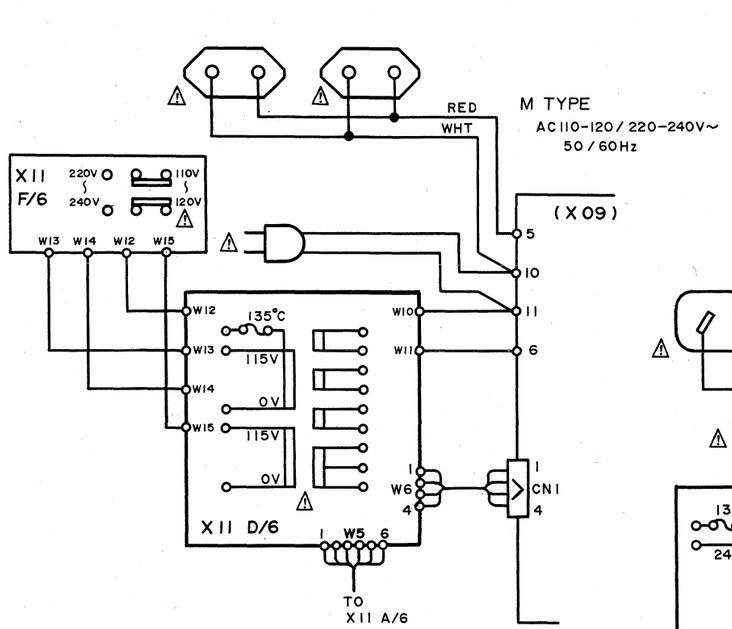
(c) Canceling the state

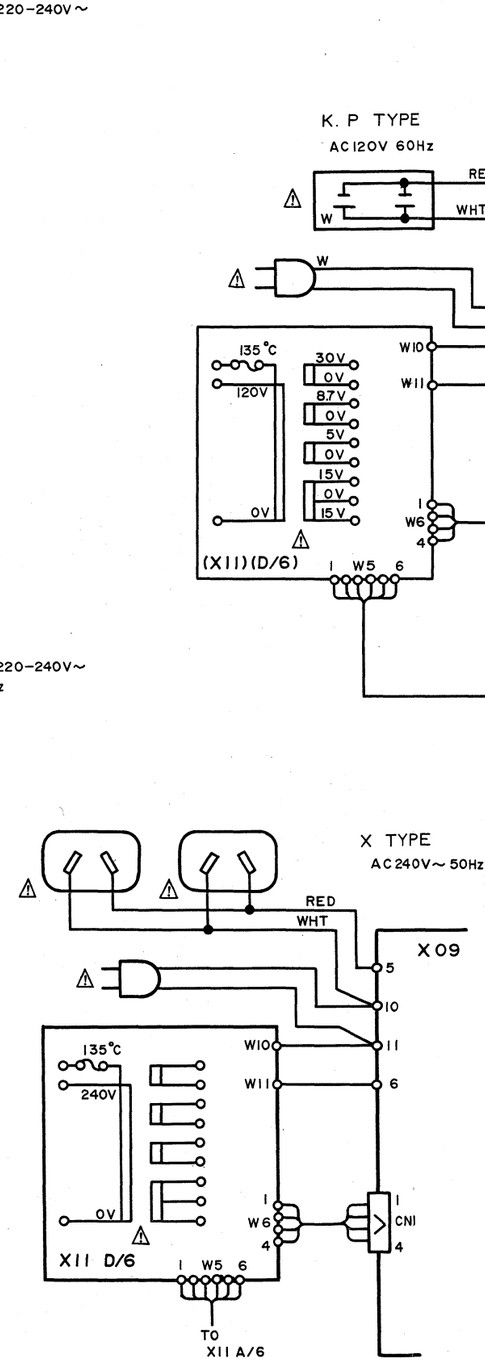
- When in the protection state, all keys except the POWER key are disabled.
- When the protection IC enters the protection state because of a momentary voltage drop or power failure and recovers from it automatically, the protection display automatically returns to the normal selector display.

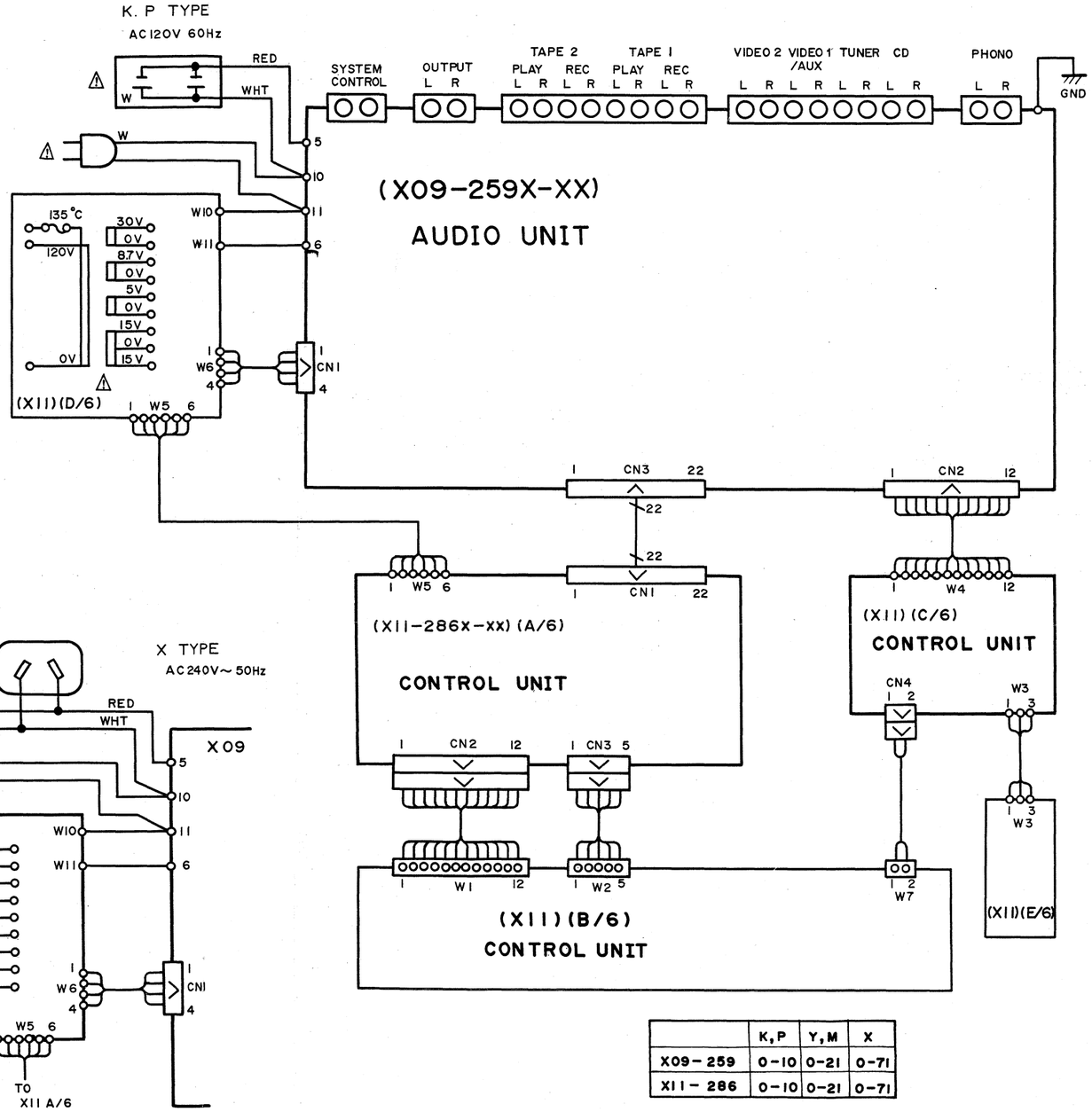
(d) The microprocessor does not monitor the protection IC state for 5 seconds after the power is switched ON.

WIRING DIAGRAM





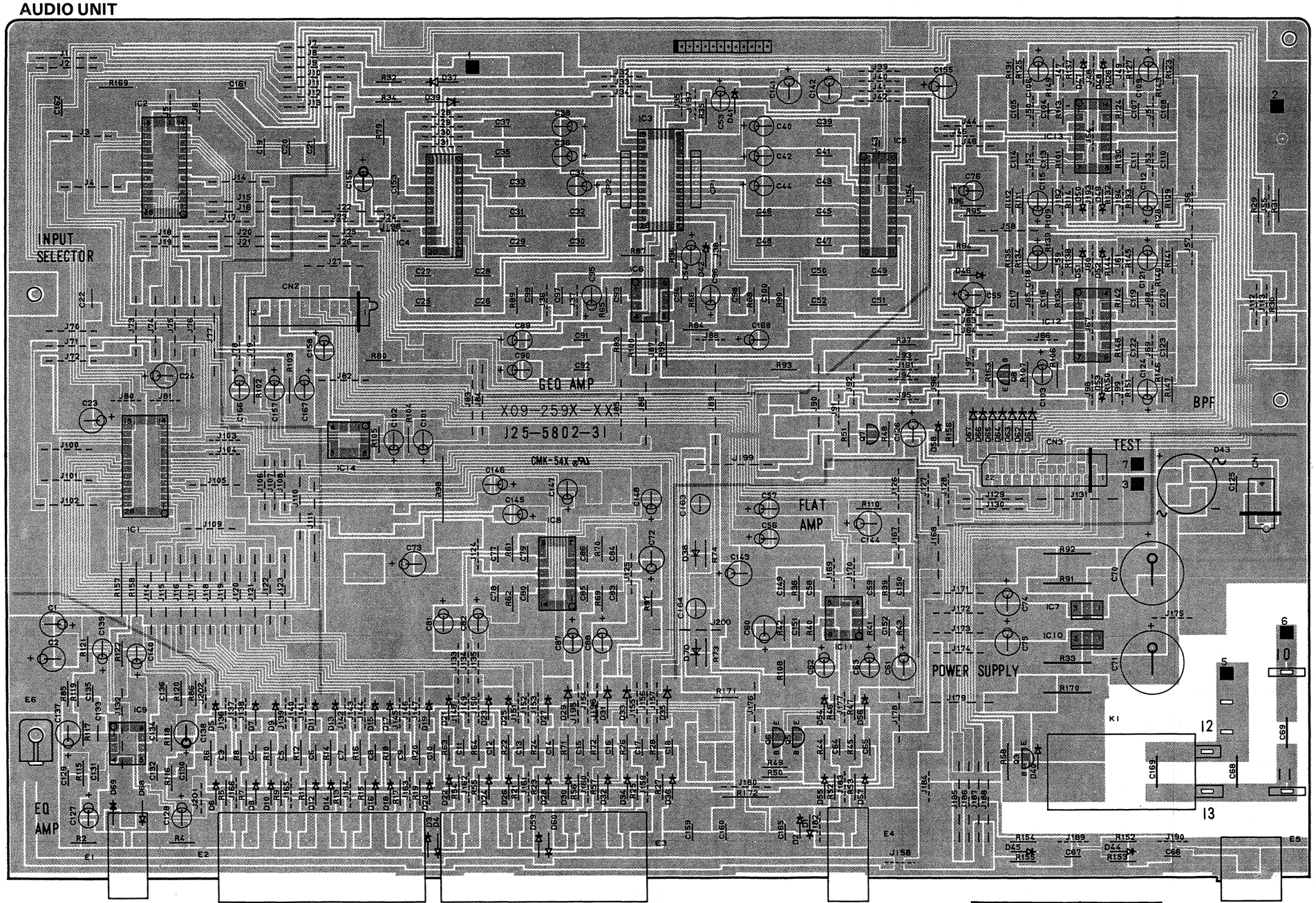




	K,P	Y,M	X
X09-259	0-10	0-21	0-71
X11-286	0-10	0-21	0-71

PC BOARD (Component Side View)

AUDIO UNIT



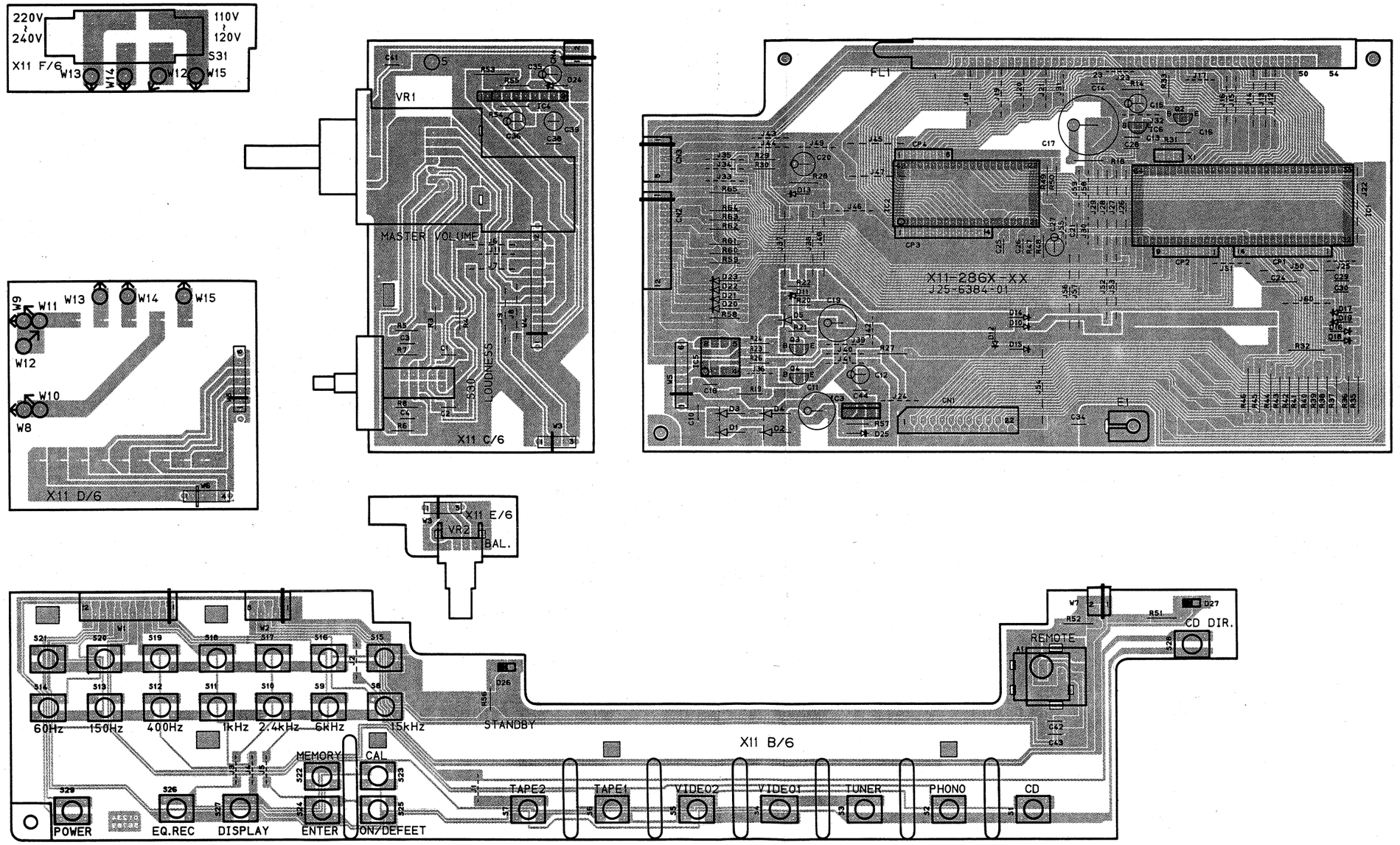
X09-2590-10

Ref. No. IC	Ref. No. Q	Address
	3	6G
	5	6F
	6	6F
	7	4F
	8	3G
1		4B
2		2B
3		2E
4		2D
5		2F
6		3E
7		5G
8		5D
9		6B
10		5G
11		5F
12		3G
13		2G
14		4C

	K,P	Y,M	X
X09-259	0-10	0-21	0-71

PC BOARD (Component Side View)

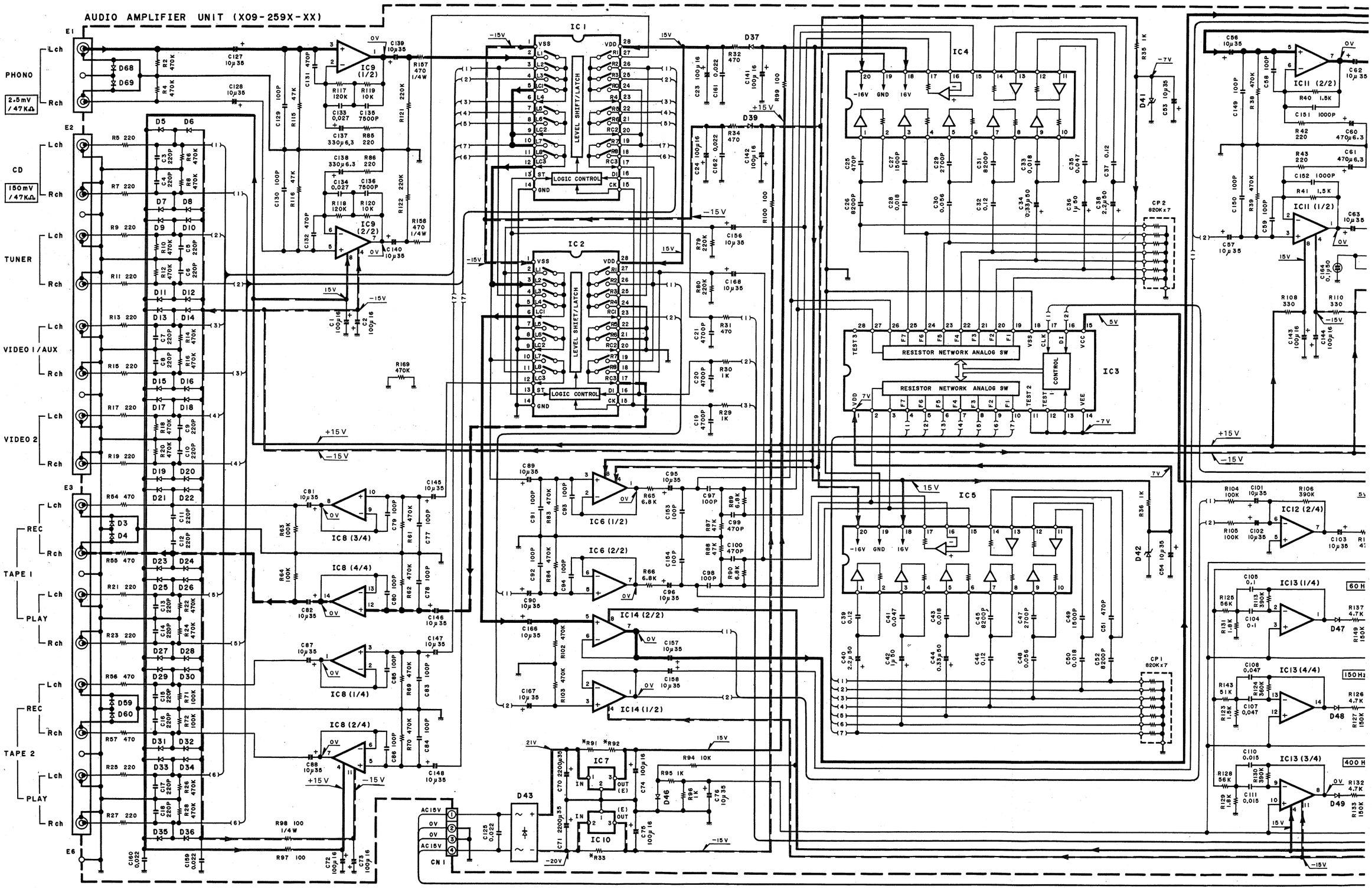
CONTROL UNIT

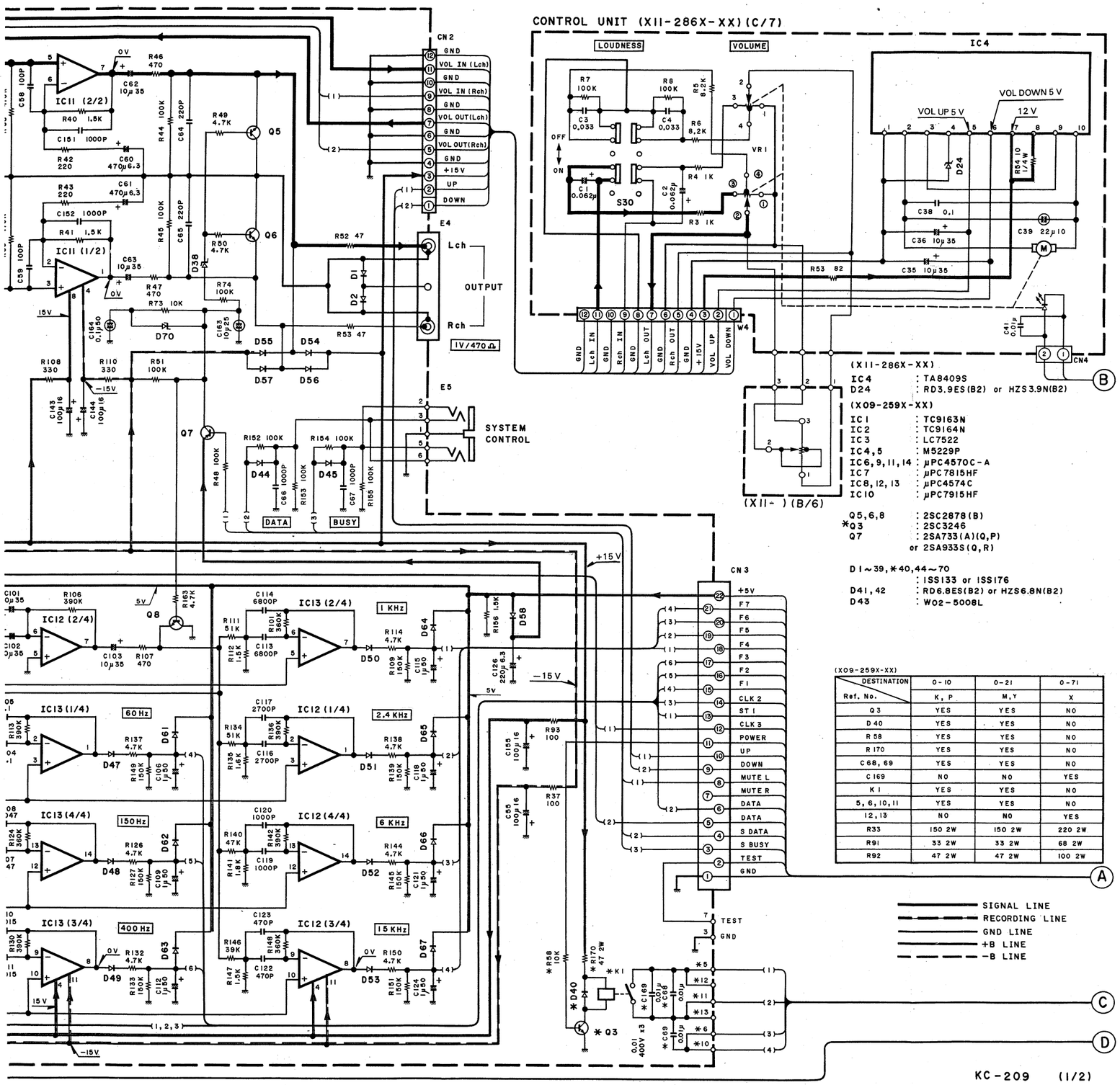


X11-2860-xx

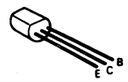
Ref. No.		Address
IC	Q	
	2	2R
	3	3P
	4	3P
1		2R
2		2P
3		3P
4		2N
5		3O
6		2R

	K,P	Y,M	X
X11-286	0-10	0-21	0-71

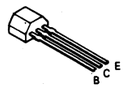

AUDIO AMPLIFIER UNIT (X09-259X-XX)
PHONO
2.5mV /47KΩ
CD
150mV /47KΩ
TUNER
VIDEO 1 /AUX
VIDEO 2
TAPE 1
REC
PLAY
TAPE 2
Lch
Rch
IC1
IC2
LEVEL SHIFT/LATCH
LOGIC CONTROL
IC3
RESISTOR NETWORK ANALOG SW
IC4
IC5
IC6 (1/2)
IC6 (2/2)
IC7
IC8 (1/4)
IC8 (2/4)
IC8 (3/4)
IC8 (4/4)
IC9 (1/2)
IC9 (2/2)
IC10
IC11 (1/2)
IC11 (2/2)
IC12 (2/4)
IC13 (1/4)
IC13 (4/4)
IC14 (1/2)
IC14 (2/2)
CP1 820K×7
CP2 820K×7
CN1
60 Hz
150 Hz
400 Hz



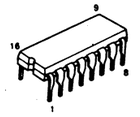
2SA733 (A)
2SC2878
2SC3246
2SC945 (A)



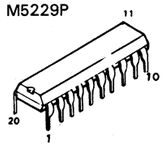
2SA933S
2SC1740S



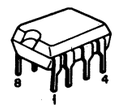
UPC4574C



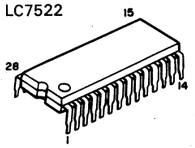
M5229P



UPC4570C-A

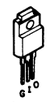


LC7522

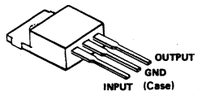


TLP3501

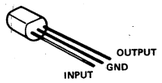
UPC7915HF



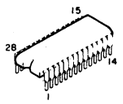
UPC7805H
UPC7815HF



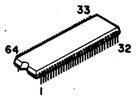
M51951ASL



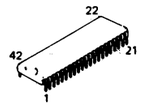
TC9163N
TC9164N



CXP5014-519



LC7565



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

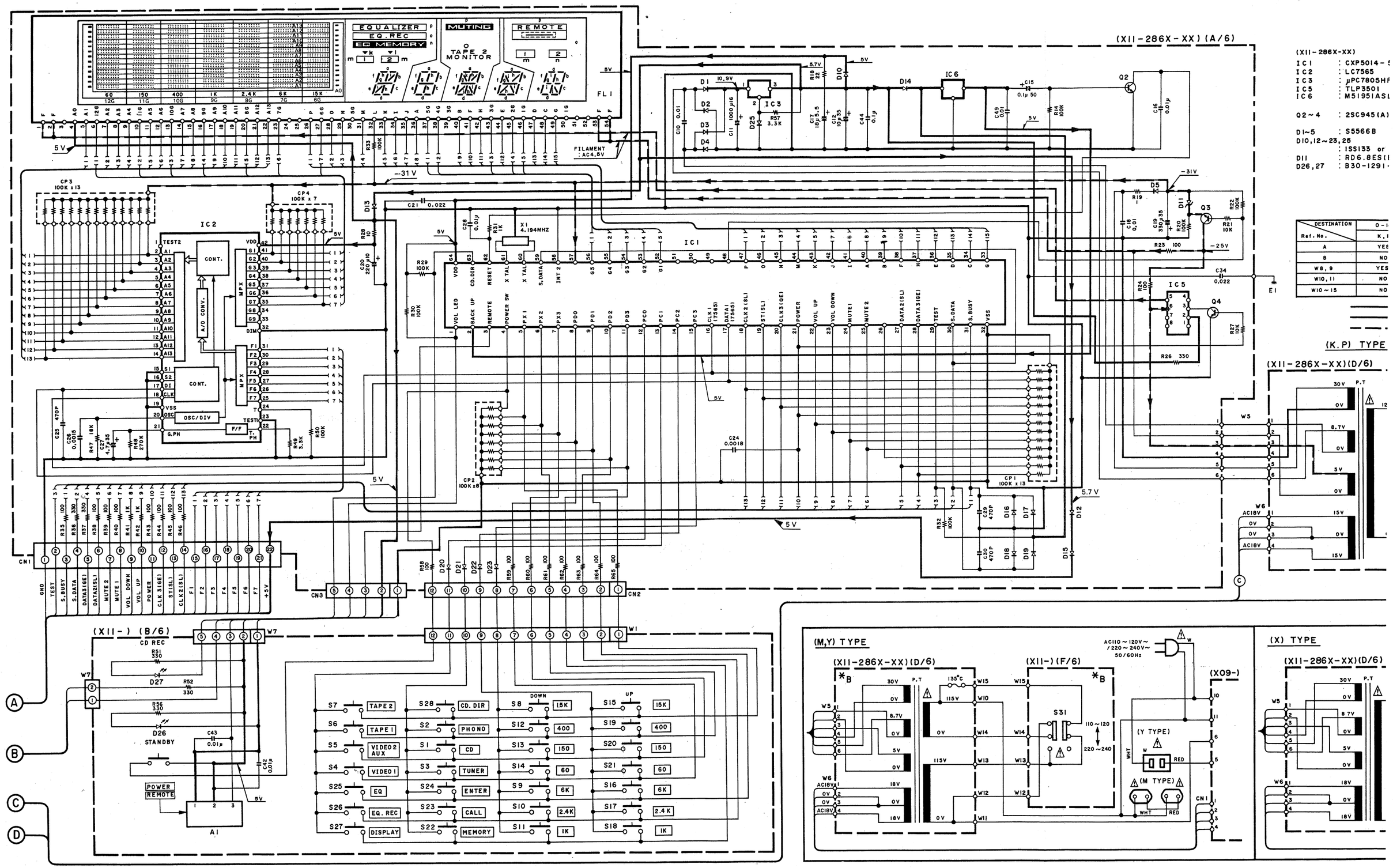
DC voltages are as measured with a high impedance voltmeter with a cassette loaded at playback mode. Values may vary slightly due to variations between individual instruments or/and units. Bias circuit DC voltages are as measured while in the record mode.

Les tensions c.c. doivent être mesurées avec un voltmètre à haute impédance, une cassette étant insérée en mode du lecture. Les valeurs peuvent différer légèrement du fait des variations inhérentes aux appareils et aux instruments de mesure individuels.
Les tensions c.c. du circuit de polarité doivent être mesurées, l'appareil étant en mode d'enregistrement.

Die angegebenen Gleichspannungswerte wurden bei eingesetzter Cassette in der Wiedergabe mit einem hochohmigen Spannungsmesser gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig. Die angegebenen Gleichspannungswerte der Vormagnetisierungsschaltung wurden in der Aufnahme-Betriebsart gemessen.

Y08-4060-10

KC-209
KENWOOD



Ref. No. \ DESTINATION	0-I
A	YES
B	NO
W8, 9	YES
W10, 11	NO
W10~15	NO

(X11-286X-XX)

IC1 : CXP5014-519S
IC2 : LC7565
IC3 : μPC7805HF
IC5 : TLP3501
IC6 : M51951ASL

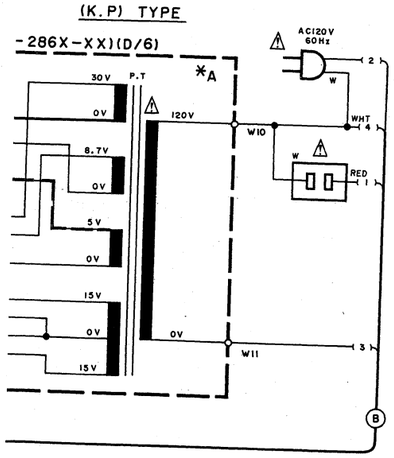
Q2~4 : 2SC945(A)(Q,P) or 2SC1740S(Q,R)

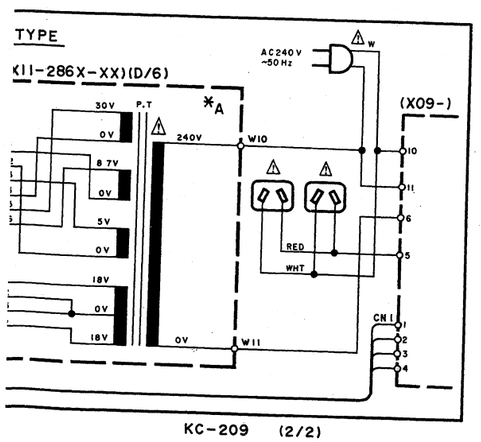
D1~5 : S5566B
D10,12~23,25 : 1SS133 or 1SS104
D11 : RD6.8ES(B2) or HZS6.8N(B2)
D26,27 : B30-1291-05

DESTINATION / Ref. No.	0-10	0-21	0-71
A	K,P	M,Y	X
B	YES	NO	YES
W8,9	NO	YES	NO
W10,11	YES	NO	NO
W10~15	NO	NO	YES
	NO	YES	NO

GND LINE
+B LINE
-B LINE

(K.P) TYPE





KC-209 (2/2)

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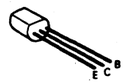
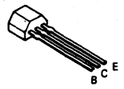
Die angegebenen Gleichspannungswerte wurden bei eingesetzter Cassette in der Wiedergabe mit einem hochohmigen Spannungsmesser gemessen. Dabei schwanken die Meßwerte aufgrund von Unterschieden zwischen einzelnen Instrumenten oder Geräten u. U. geringfügig. Die angegebenen Gleichspannungswerte der Vormagnetisierungsschaltung wurden in der Aufnahme-Betriebsart gemessen.

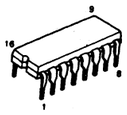
2SA733 (A)
2SC2878
2SC3246
2SC945 (A)



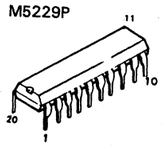
2SA933S
2SC1740S



UPC4574C

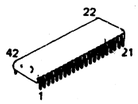


M5229P

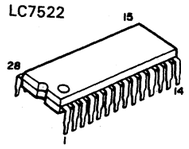


UPC4570C-A

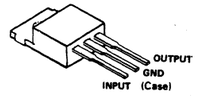
LC7565



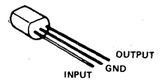
LC7522



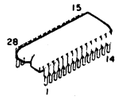
UPC7805H
UPC7815HF



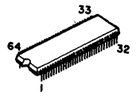
M51951ASL



TC9163N
TC9164N



CXP5014-519



TLP3501

UPC7915HF

Y08-4060-10

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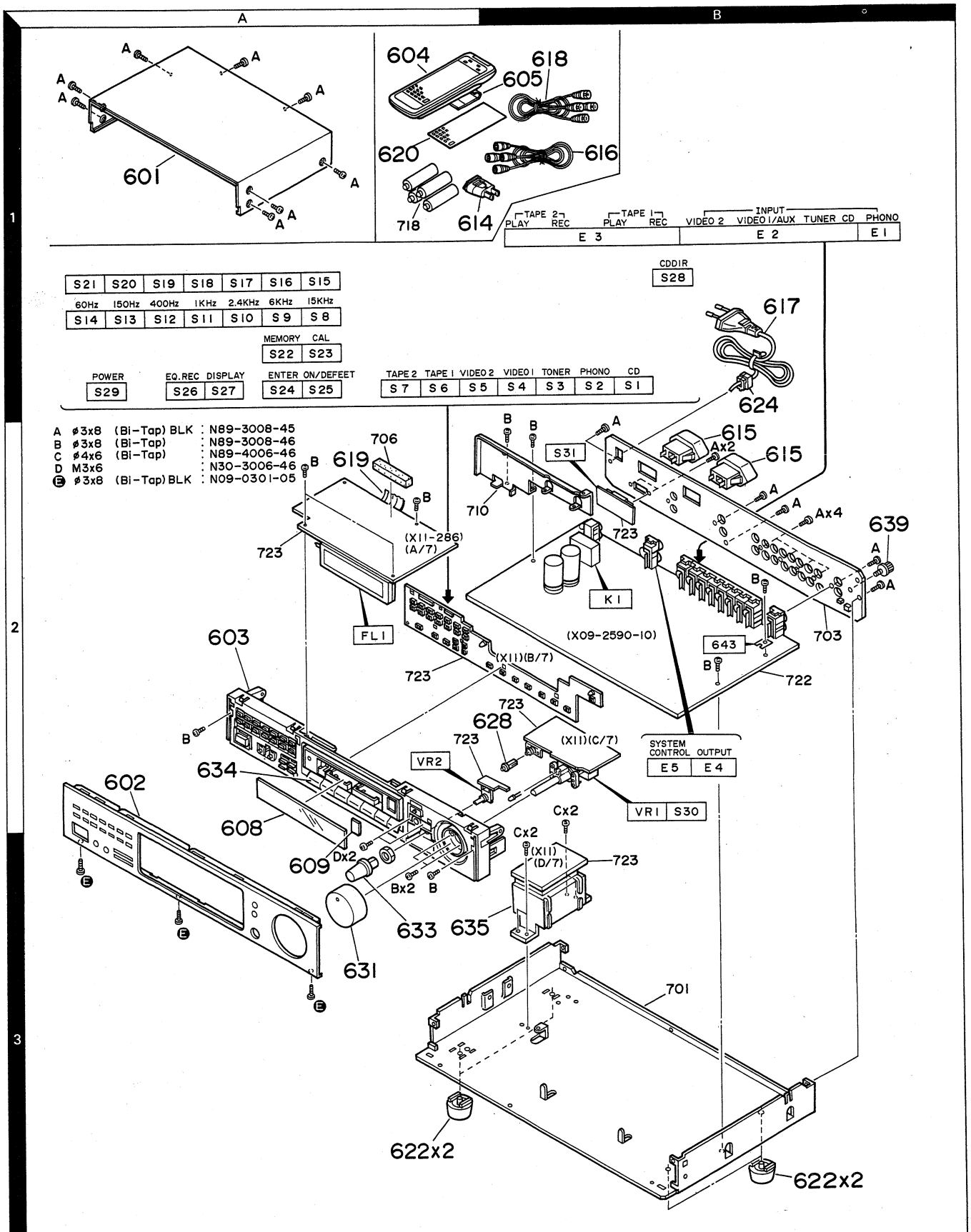
KENWOOD

EXPLODED VIEW



Parts with the exploded numbers larger than 700 are not supplied.

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			KC-209			
601	1A		A01-1761-01	METALLIC CABINET		
602	2A,3A	*	A20-5999-02	PANEL		
603	2A	*	A22-1174-02	SUB PANEL ASSY		
604	1A,1B	*	A70-0342-05	REMOTE CONTROLLER ASSY		
605	1A,1B		A09-0086-08	BATTERY COVER(REMOTE CON)		
608	2A	*	B03-2624-04	DRESSING PLATE		
609	2A,3A		B03-2478-04	DRESSING PLATE (REMOT SENCER)		
-			B46-0092-03	WARRANTY CARD	K	
-			B46-0094-03	WARRANTY CARD	Y	
-			B46-0095-03	WARRANTY CARD	Y	
-			B46-0096-13	WARRANTY CARD	X	
-			B46-0121-03	WARRANTY CARD	P	
-			B58-0513-04	CAUTION CARD (PRESET220-240)	Y	
-		*	B60-0015-00	INSTRUCTION MANUAL(ENGLISH)		
-		*	B60-0016-00	INSTRUCTION MANUAL(FRANCH)	PM	
-		*	B60-0017-00	INSTRUCTION MANUAL(SPA,ARA,CH)	M	
614	1A,1B	*	E03-0115-05	AC PLUG ADAPTOR	M	
615	2B		E03-0055-05	AC OUTLET	M	
615	2B		E03-0072-05	AC OUTLET	KPY	
⚠ 615	2B	*	E03-0114-05	AC OUTLET	X	
616	1B		E30-0615-05	AUDIO CORD		
617	2B		E30-0459-05	AC POWER CORD	M	
⚠ 617	2B		E30-0812-05	AC POWER CORD	Y	
⚠ 617	2B		E30-0996-05	AC POWER CORD	KP	
⚠ 617	2B		E30-1341-05	AC POWER CORD	X	
618	1B		E30-1392-05	CORD WITH PLUG		
619	2A		E31-4334-05	FLAT CABLE		
620	1A	*	G16-0756-08	WRITING SEET		
-		*	H01-8758-04	ITEM CARTON CASE		
-		*	H10-3977-02	POLYSTYRENE FOAMED FIXTURE		
-		*	H10-3978-02	POLYSTYRENE FOAMED FIXTURE		
-			H25-0148-04	PROTECTION BAG (110X230X0.07)		
-			H25-0223-04	PROTECTION BAG (750X350X0.03)		
-			H25-0232-04	PROTECTION BAG (235X350X0.03)		
622	3A,3B		J02-0366-15	FOOT		
⚠ 624	1A,2B		J42-0083-05	POWER CORD BUSHING		
-			J61-0307-05	WIRE BAND		
628	2B		K27-1853-04	KNOB (BUTTON) LOUDNESS		
631	3A		K29-3744-04	KNOB ASSY VOL CONTROL		
633	3A		K29-3632-04	KNOB BALANCE		
634	2A,3A	*	K29-3899-03	KNOB INPUT SELECTOR		
635	3B		L01-5071-05	POWER TRANSFORMER	KP	
635	3B		L01-5072-05	POWER TRANSFORMER	X	
635	3B		L01-5074-05	POWER TRANSFORMER	YM	
639	2B		N08-0128-35	BINDING POST (GND)		
A	1A		N89-3008-45	BINDING HEAD TAPTITE SCREW		
B	2A		N89-3008-46	BINDING HEAD TAPTITE SCREW		
C	3B		N89-4006-46	BINDING HEAD TAPTITE SCREW		
D	3A		N30-3006-46	PAN HEAD MACHINE SCREW		

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E	3A		N09-2706-05	SCREW				
AUDIO UNIT (X09-2590-10: K, P, 0-21: Y, M, 0-71: X)								
C1 ,2			CE04LW1C101M	ELECTRO	100UF	16WV		
C3 -18			CC45FSL1H221J	CERAMIC	220PF	J		
C19 -22			CK45FF1H472Z	CERAMIC	4700PF	Z		
C23 ,24			CE04LW1C101M	ELECTRO	100UF	16WV		
C25			CK45FB1H471K	CERAMIC	470PF	K		
C26			CF92FV1H822J	MF	8200PF	J		
C27			CF92FV1H152J	MF	1500PF	J		
C28			CF92FV1H183J	MF	0.018UF	J		
C29			CF92FV1H272J	MF	2700PF	J		
C30			CF92FV1H563J	MF	0.056UF	J		
C31			CF92FV1H822J	MF	8200PF	J		
C32			CF92FV1H124J	MF	0.12UF	J		
C33			CF92FV1H183J	MF	0.018UF	J		
C34			CE04LW1HR33M	ELECTRO	0.33UF	50WV		
C35			CF92FV1H473J	MF	0.047UF	J		
C36			CE04LW1H010M	ELECTRO	1.0UF	50WV		
C37			CF92FV1H124J	MF	0.12UF	J		
C38			CE04LW1H2R2M	ELECTRO	2.2UF	50WV		
C39			CF92FV1H124J	MF	0.12UF	J		
C40			CE04LW1H2R2M	ELECTRO	2.2UF	50WV		
C41			CF92FV1H473J	MF	0.047UF	J		
C42			CE04LW1H010M	ELECTRO	1.0UF	50WV		
C43			CF92FV1H183J	MF	0.018UF	J		
C44			CE04LW1HR33M	ELECTRO	0.33UF	50WV		
C45			CF92FV1H822J	MF	8200PF	J		
C46			CF92FV1H124J	MF	0.12UF	J		
C47			CF92FV1H272J	MF	2700PF	J		
C48			CF92FV1H563J	MF	0.056UF	J		
C49			CF92FV1H152J	MF	1500PF	J		
C50			CF92FV1H183J	MF	0.018UF	J		
C51			CK45FB1H471K	CERAMIC	470PF	K		
C52			CF92FV1H822J	MF	8200PF	J		
C53 ,54			CE04LW1V100M	ELECTRO	10UF	35WV		
C55			CE04LW1C101M	ELECTRO	100UF	16WV		
C56 ,57			CE04LW1V100M	ELECTRO	10UF	35WV		
C58 ,59			CC45FSL1H101J	CERAMIC	100PF	J		
C60 ,61			CE04LW0J471M	ELECTRO	470UF	6.3WV		
C62 ,63			CE04LW1V100M	ELECTRO	10UF	35WV		
C64 ,65			CC45FSL1H221J	CERAMIC	220PF	J		
C66 ,67			CK45FB1H102K	CERAMIC	1000PF	K		
⚠ C68 ,69			C91-0647-05	CERAMIC	0.01UF	P	KPYM	
C70 ,71			CE04LW1V222M	ELECTRO	2200UF	35WV		
C72 -75			CE04LW1C101M	ELECTRO	100UF	16WV		
C76			CE04LW1V100M	ELECTRO	10UF	35WV		
C77 -80			CC45FSL1H101J	CERAMIC	100PF	J		
C81 ,82			CE04LW1V100M	ELECTRO	10UF	35WV		
C83 -86			CC45FSL1H101J	CERAMIC	100PF	J		
C87 -90			CE04LW1V100M	ELECTRO	10UF	35WV		
C91 -94			CC45FSL1H101J	CERAMIC	100PF	J		
C95 ,96			CE04LW1V100M	ELECTRO	10UF	35WV		
C97 ,98			CC45FSL1H101J	CERAMIC	100PF	J		
C99 ,100			CK45FB1H471K	CERAMIC	470PF	K		

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C101-103			CE04LW1V100M	ELECTRO 10UF 35WV		
C104,105			CF92FV1H104J	MF 0.10UF J		
C106			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C107,108			CF92FV1H473J	MF 0.047UF J		
C109			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C110,111			CF92FV1H153J	MF 0.015UF J		
C112			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C113,114			CF92FV1H682J	MF 6800PF J		
C115			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C116,117			CF92FV1H272J	MF 2700PF J		
C118			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C119,120			CF92FV1H102J	MF 1000PF J		
C121			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C122,123			CK45FB1H471K	CERAMIC 470PF K		
C124			CE04LW1H010M	ELECTRO 1.0UF 50WV		
C125			CK45FF1H223Z	CERAMIC 0.022UF Z		
C126			CE04LW0J221M	ELECTRO 220UF 6.3WV		
C127,128			CE04LW1V100M	ELECTRO 10UF 35WV		
C129,130			CC45FSL1H101J	CERAMIC 100PF J		
C131,132			CK45FB1H471K	CERAMIC 470PF K		
C133,134			CF92FV1H273J	MF 0.027UF J		
C135,136			CF92FV1H752J	MF 7500PF J		
C137			CE04LW0J331M	ELECTRO 330UF 6.3WV		
C138			CE04LW0J331M	ELECTRO 330UF 6.3WV		
C139,140			CE04LW1V100M	ELECTRO 10UF 35WV		
C141-144			CE04LW1C101M	ELECTRO 100UF 16WV		
C145-148			CE04LW1V100M	ELECTRO 10UF 35WV		
C149,150			CC45FSL1H101J	CERAMIC 100PF J		
C151,152			CK45FB1H102K	CERAMIC 1000PF K		
C153,154			CC45FSL1H101J	CERAMIC 100PF J		
C155			CE04LW1C101M	ELECTRO 100UF 16WV		
C156			CE04JW1V100M	ELECTRO 10UF 35WV		
C157,158			CE04LW1V100M	ELECTRO 10UF 35WV		
C159-162			CK45FF1H223Z	CERAMIC 0.022UF Z		
C163			C90-1332-05	NP-ELEC 10UF 25WV		
C164			C90-1455-05	NP-ELEC 0.1UF 50WV		
C165			CK45FF1H223Z	CERAMIC 0.022UF Z		
C166-168			CE04LW1V100M	ELECTRO 10UF 35WV		
⚠ C169			C91-0647-05	CERAMIC 0.01UF P	X	
643	2B		E23-0159-05	TERMINAL		
CN3			E10-2211-05	FLAT CABLE CONNECTOR		
E1	2B		E13-0235-05	PHONO JACK (2P) PHONO		
E2 ,3			E13-0820-05	PHONO JACK (INPUT)		
E5	2B		E11-0168-05	MINIATURE PHONE JACK(SYNCRO)		
CP1 ,2			R90-0491-05	MULTI-COMP 820KX7 J 1/6W		
R33			RS14KB3D151J	FL-PROOF RS 150 J 2W	KPYM	
R33			RS14KB3D221J	FL-PROOF RS 220 J 2W	X	
R91			RS14KB3D330J	FL-PROOF RS 33 J 2W	KPYM	
R91			RS14KB3D680J	FL-PROOF RS 68 J 2W	X	
R92			RS14KB3D101J	FL-PROOF RS 100 J 2W	X	
R92			RS14KB3D470J	FL-PROOF RS 47 J 2W	KPYM	
R170			RS14KB3D470J	FL-PROOF RS 47 J 2W	KPYM	
⚠ K1	2B		S51-1036-05	MAGNETIC RELAY	KPYM	

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D1 -39			1SS133	DIODE	X	
D1 -39			1SS176	DIODE	X	
D1 -40			1SS133	DIODE	KPYM	
D1 -40			1SS176	DIODE	KPYM	
D41 ,42			HZS6.8N(B2)	ZENER DIODE		
D41 ,42			RD6.8ES(B2)	ZENER DIODE		
D43			W02-5008L	DIODE		
D44 -70			1SS133	DIODE		
D44 -70			1SS176	DIODE		
IC1			TC9163N	IC(BILATERAL SWITCH X16)		
IC2			TC9164N	IC(16CH BILATERAL SELECTOR SW)		
IC3			LC7522	IC(7CH GRAPHIC EQUALIZER)		
IC4 ,5			M5229P	IC(7CH GRAPHIC EQUALIZER)		
IC6			UPC4570C-A	IC(OP AMP X2)		
IC7			UPC7815HF	IC(VOLTAGE REGULATOR/ +15V)		
IC8			UPC4574C	IC(OP AMP X4)		
IC9			UPC4570C-A	IC(OP AMP X2)		
IC10			UPC7915HF	IC(VOLTAGE REGULATOR/ -15V)		
IC11			UPC4570C-A	IC(OP AMP X2)		
IC12,13			UPC4574C	IC(OP AMP X4)		
IC14			UPC4570C-A	IC(OP AMP X2)		
Q3			2SC3246	TRANSISTOR	KPYM	
Q5 ,6			2SC2878(B)	TRANSISTOR		
Q7			2SA733(A)(Q,P)	TRANSISTOR		
Q7			2SA933S(Q,R)	TRANSISTOR		
Q8			2SC2878(B)	TRANSISTOR		
CONTROL UNIT (X11-2860-10: K, P, 0-21: Y, M, 0-71: X)						
D26 ,27		*	B30-1291-05	LED		
C1 ,2			CF92FV1H623J	MF 0.062UF J		
C3 ,4			CF92FV1H333J	MF 0.033UF J		
C10			CK45FF1H103Z	CERAMIC 0.010UF Z		
C11			CE04LW1C102M	ELECTRO 1000UF 16WV		
C12			CE04LW1V100M	ELECTRO 10UF 35WV		
C14			CK45FF1H103Z	CERAMIC 0.010UF Z		
C15			CE04LW1H0R1M	ELECTRO 0.1UF 50WV		
C16			CK45FF1H103Z	CERAMIC 0.010UF Z		
C17			C90-1416-05	ELECTRO 18UF 5.5WV		
C18			CK45FF1H103Z	CERAMIC 0.010UF Z		
C19			CE04LW1V331M	ELECTRO 330UF 35WV		
C20			CE04LW1A221M	ELECTRO 220UF 10WV		
C21			CK45FF1H223Z	CERAMIC 0.022UF Z		
C24			C91-0085-05	CERAMIC 0.022UF N		
C25			CK45FB1H471K	CERAMIC 470PF K		
C26			CK45FB1H152K	CERAMIC 1500PF K		
C27			CE04LW1V4R7M	ELECTRO 4.7UF 35WV		
C28			CK45FF1H103Z	CERAMIC 0.010UF Z		
C29 ,30			CK45FB1H471K	CERAMIC 470PF K		
C34			CK45FF1H223Z	CERAMIC 0.022UF Z		
C35 ,36			CE04LW1V100M	ELECTRO 10UF 35WV		
C38			CF92FV1H104J	MF 0.10UF J		
C39			C90-1333-05	NP-ELEC 22UF 10WV		
C41 -43			CK45FF1H103Z	CERAMIC 0.010UF Z		
C44			CF92FV1H104J	MF 0.10UF J		

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CN1			E10-2212-05	FLAT CABLE CONNECTOR		
X1			L78-0209-05	RESONATOR (4.194MHZ)		
CP1			R90-0483-05	MULTI-COMP 100KX13 J 1/6W		
CP2			R90-0492-05	MULTI-COMP 100KX8 J 1/6W		
CP3			R90-0483-05	MULTI-COMP 100KX13 J 1/6W		
CP4			R90-0803-05	MULTI-COMP 100KX7 J 1/4W		
R19			RD14GB2E1R0J	FL-PROOF RD 1.0 J 1/4W		
R53			RS14KB3A820J	FL-PROOF RS 82 J 1W		
R54			RD14GB2E100J	FL-PROOF RD 10 J 1/4W		
VR1	3B	*	R29-5038-15	POTENTIOMETER (VOL CONTROL)		
VR2	3B	*	R05-5034-05	POTENTIOMETER (BALANCE)		
S1 -29	1A,2A		S40-1064-05	PUSH SWITCH (CD,PHONO,TUNER)		
S30	3B	*	S40-4080-05	PUSH SWITCH (LOUDNESS)		
⚠ S31	2B		S31-2128-05	SLIDE SWITCH (POWER TYPE)	YM	
D1 -5			S5566B	DIODE		
D10			HSS104	DIODE		
D10			1SS133	DIODE		
D11			HZS6.8N(B2)	ZENER DIODE		
D11			RD6.8ES(B2)	ZENER DIODE		
D12 -23			HSS104	DIODE		
D12 -23			1SS133	DIODE		
D24			HZS3.9N(B2)	ZENER DIODE		
D24			RD3.9ES(B2)	ZENER DIODE		
D25			HSS104	DIODE		
D25			1SS133	DIODE		
FL1	2A		FIP12AMW19A	FLUORESCENT INDICATOR TUBE		
IC1		*	CXP5014-519S	IC(MICROPROCESSOR)		
IC2			LC7565	IC(GRAPHIC EQ FL DISPLAY DR)		
IC3			UPC7805HF	IC(VOLTAGE REGULATOR/ +5V)		
IC4		*	TA8409S	IC(MOTOR CONTROL)		
IC5			TLP3501	IC(PHOTO TRIAC +LED)		
IC6			M51951ASL	IC(SYSTEM RESET)		
Q2 -4			2SC1740S(Q,R)	TRANSISTOR		
Q2 -4			2SC945(A)(Q,P)	TRANSISTOR		
A1	2A	*	W02-1043-05	ELECTRIC CIRCUIT MODULE		

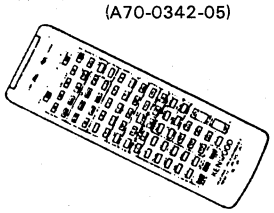
E: Scandinavia & Europe K: USA P: Canada
Y: PX(Far East, Hawaii) T: England M: Other Areas
Y: AAFES(Europe) X: Australia

⚠ indicates safety critical components.

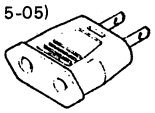
ACCESSORIES

Accessories

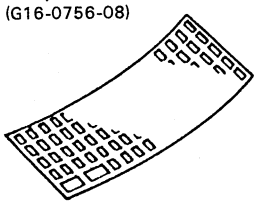
Remote control unit 1
(A70-0342-05)



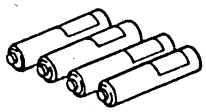
AC plug adaptor 1
(except for some areas)
For the unit with a European AC plug in areas other than Europe.
(E03-0115-05)



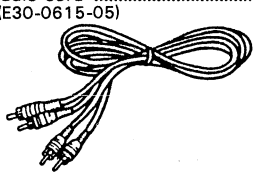
Overlay sheet 1
(G16-0756-08)



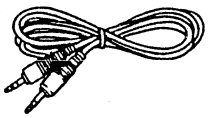
Battery ("AAA" or "R03") 4



Audio cord 1
(E30-0615-05)



System control cord 1
(E30-1392-05)



KC-209

SPECIFICATIONS

PERFORMANCE

Input Sensitivity
- **PHONO** ..... 2.5 mV, 47 kohms
- **TUNER/AUX/TAPE PLAY/CD/VIDEO** ..... 150 mV, 33 kohms

Signal to Noise Ratio (IHF-A) (IHF'66)
- **PHONO** ..... 79 dB, 2.5 mV input
  85 dB, 5.0 mV input
- **TUNER/AUX/TAPE PLAY/CD/VIDEO** ..... 103 dB

Maximum Input Voltage for Phono ..... 130 mV (RMS), T.H.D. 0.03% at 1,000 Hz

Frequency Response
- **PHONO** ..... RIAA Standard Curve ±0.3 dB
  (20 Hz - 20 kHz)
- **LINE → SPEAKER** ..... 10 Hz - 70 kHz (−3 dB)

Total Harmonic Distortion
- **LINE → SPEAKER**
  - **20 Hz ~ 20 kHz** ..... 0.004% at Rated Output
  - **1 kHz** ..... 0.003% at 1/2 Rated Output

Output Voltage and Impedance ..... TAPE REC: 150 mV/330 ohms
PRE OUT: 1000 mV/330 ohms

Loudness Control ..... +8 dB (100 Hz) (at volume −30 dB)

Graphic equalizer control
(60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz) ..... ±12 dB

GENERAL

Power Consumption ..... 15 W

AC Outlet ..... 1 Switched (Except for some areas.)

Dimensions ..... W 420 mm (16-9/16")
H 80 mm (3-1/8")
D 272 mm (10-11/16")

Weight (Net) ..... 3.0 kg (6.6 lb)

Kenwood follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Kenwood poursuit une politique de progrès constants en ce qui doncerne le développement. Pour cette raison, les spécifications sont sujettes à modifications sans préavis.

Kenwood strebt ständige, Verbesserungen in der Entwicklung an. Daher bleiben Änderungen der technischen Daten jederzeit vorbehalten.

Note
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on the U.S.A. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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